CMP630

200V N-Channel MOSFET

General Description

The MOSFETs utilize advanced processing techniques to achieve extremely low on-resistance per silicon area. This benefit, combined with the fast switching speed and ruggedized device design, provides the designer with anextremely efficient and reliable device for use in a wide variety of applications.

Product Summary

BVDSS	RDSON	ID
200V	0.3Ω	9A

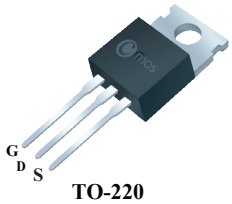
Applications

- PWM Motor Controls
- LED TV
- DC-DC Converters

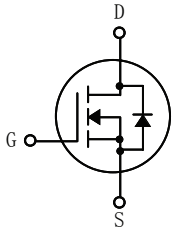
Features

- Fast Switching
- 100% avalanche tested
- Simple Drive Requirements
- RoHS Compliant

TO-220 Pin Configuration



TO-220
(CMP630)



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	200	V
V_{GS}	Gate-Soruce Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current	9	A
I_D@T_C=100℃	Continuous Drain Current	6.5	A
I_{DM}	Pulsed Drain Current	27	A
EAS	Single Pulse Avalanche Energy[1]	100	mJ
I_{AR}	Avalanche Current	9	A
P_D@T_C=25℃	Total Power Dissipation	50	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62	℃/ W
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	1.83	℃/ W

Electrical Characteristics (T_J=25℃ , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	200	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=4.5A	---	---	0.3	Ω
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}= 200V , V_{GS}=0V	---	---	25	uA
		V_{DS}=160V , V_{GS}=0V , T_J=150℃	---	---	250	
I_{GSS}	Gate-Source Leakage Current	V_{GS} =±20V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=10V, I_D=5A	---	15	---	S
Q_g	Total Gate Charge	V_{DS}=160V, V_{GS}=10V, I_D=5.4A	---	24	---	nC
Q_{gs}	Gate-Source Charge		---	4	---	
Q_{gd}	Gate-Drain Charge		---	12	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=100V , R_D=18Ω , R_G=13Ω I_D=5.4A	---	9	---	ns
T_r	Rise Time		---	18	---	
$T_{d(off)}$	Turn-Off Delay Time		---	35	---	
T_f	Fall Time		---	20	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	800	---	pF
C_{oss}	Output Capacitance		---	200	---	
C_{rss}	Reverse Transfer Capacitance		---	70	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	9	A
I_{SM}	Pulsed Source Current		---	---	27	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=5.4A , T_J=25℃	---	---	1.3	V

Note :

1.Starting T_J = 25℃, L = 0.5mH, V_G = 10V, I_{AS} = 20A.